

IN THE CLAIMS:

1. (Currently Amended) A robot for vacuum cleaning surfaces, ~~which the~~ robot is ~~provided with~~ comprising:

a housing,

a suction unit accommodated in said housing,

a suction nozzle mounted to the housing, which suction nozzle is situated, during operation, close to a surface to be vacuum cleaned,

a motor-drivable wheel system by means of which the housing can be displaced over the surface to be cleaned, and

an electrical control member for controlling a displacement of the housing to be generated by means of the motor-drivable wheel system,

~~characterized in that~~ wherein the displacement controlled by the electrical control member comprises a substantially cycloid movement that is brought about by a rolling motion of ~~an imaginary~~ along a rolling circle and ~~along an imaginary~~ a line of displacement of the housing over the surface to be cleaned, the suction nozzle being eccentrically arranged with respect to the rolling circle, which rolling circle extends parallel to the surface to be cleaned and is fixed with respect to the housing.

2. (Currently Amended) A The robot as claimed in claim 1, ~~characterized in that~~ wherein the wheel system comprises at least three wheels arranged at ~~regular~~ equally spaced intervals ~~in accordance with an imaginary~~ along a periphery of a base circle, each wheel having a wheel axle extending ~~in accordance with a radial of~~ radially with respect to the base circle and each wheel being drivable by means of a ~~separate~~ motor, and each wheel further being provided, along its circumference, with ~~a number of~~ two or more rolls each

having a roll axle extending in a tangential direction with respect to the wheel axle of the relevant wheel.

3. (Currently Amended) A ~~The~~ robot as claimed in claim 2, ~~characterized in that wherein~~ the rolling circle is concentric with the base circle, while the radius of the rolling circle is at the most equal to approximately $W_S/2\pi$, where W_S is a main dimension of the suction nozzle, measured along a radial of the base circle.

4. (Currently Amended) A ~~The~~ robot as claimed in claim 3, ~~characterized in that wherein~~ the suction nozzle extends, ~~when~~ viewed along said radial of the base circle, substantially up to ~~the periphery of~~ said base circle.

5. (Currently Amended) A ~~The~~ robot as claimed in claim 3, ~~characterized in that wherein~~ the radius of the rolling circle is smaller than approximately $0.16.R_B$, where R_B is the radius of the base circle.